

A large, intense explosion with bright orange and yellow flames and a dark, smoky plume, serving as the background for the text.

NAVAIR

ORDNANCE AND FUZING

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Public Released

NAVAIR is . . .

- Aircraft
- Weapons
- Integration



F/A-18



JSOW



Integration

Naval Air Systems Command

Aircraft Division

- Lakehurst
- Orlando
- Patuxent River



Weapons Division

- China Lake
- Point Mugu

Aviation Depots

- Cherry Point
- Jacksonville
- North Island

NAVAIR Weapons Division



NAVAIR WD Firsts

Paving the Way For Modern Weaponry

- **First aircraft rockets in the US inventory**
- **First air-to-air guided missile ever used in combat – Sidewinder**
- **First antiradar missile – Shrike**
- **First precision guided air-to-surface weapon – Walleye**
- **First reprogrammable self-protection jammer**
- **First fully software-controlled weapon system – F-14/Phoenix**
- **First real-time night display of targets**
- **First to synthesize HNB, the most powerful explosive known**
- **First to develop and test the concept for the Polaris missile**
- **One of the first to launch a satellite into orbit in the 1950s**
- **First to demonstrate an anti-satellite weapon**
- **First technology to photograph the back side of the moon**
- **First U.S. manned submersible to descend more than 2,000 feet**

Range Capabilities

- Land Range: 1,777 square miles
 - Airspace: 20,000 square miles
- Sea Range: 36,000 square miles (expandable to 125,000 square miles)
 - Airspace: 36,000 square miles



Laboratories

40 Major Facilities

Research

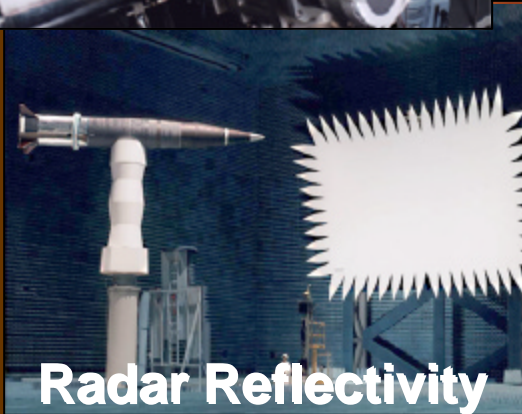


Survivability



- \$2.8 - Billion dollar replacement value
- 2,000 Buildings
- Over 6 - Million square feet

Radar Reflectivity



Burro Canyon



**Iron
Crow**



**Coso
Geothermal**



Sky Top



Missile Engagement Simulation Arena



F-4 Fighter

- **Guidance and Fuze Testing**
 - Fuze Design and Development
 - Fuze optimization
 - Platform survivability
 - Terminal guidance investigation



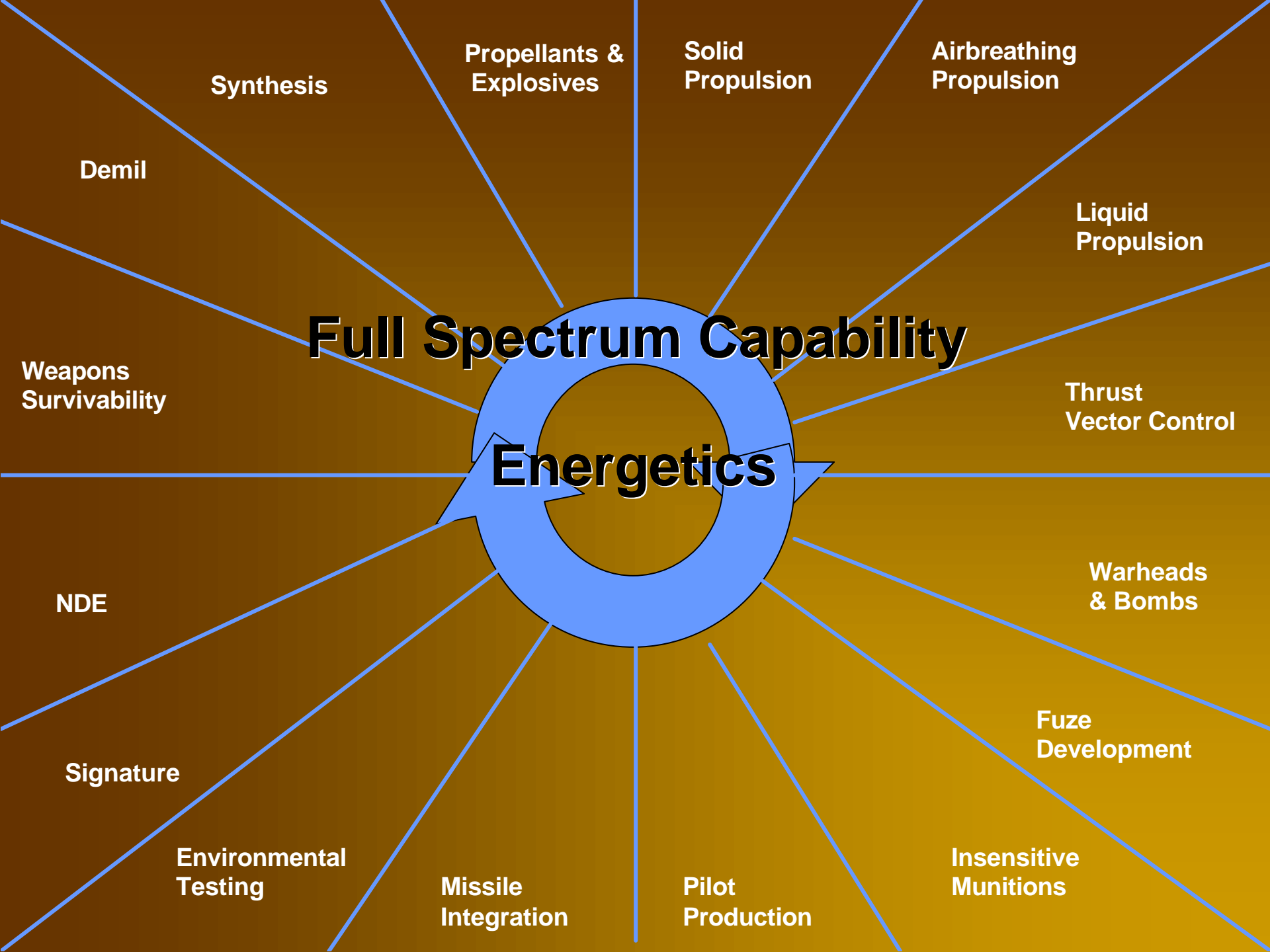
Fuze Testing Against F-18

Testing

2,500 Annual Test Events



As of 1 Oct 2001



NAVAIR Energetics

Full-Spectrum Capability



- Thermal Batteries
- Warheads & Bombs
- Fuzes

- Guns and Ammunition
- Engineering Prototyping
- Weapons Integration

NAVAIR WD Fuzing Roles Include

- **Designated NAVY leadership for missile and free-fall weapon fuzing**
- **Safety Community Support**
 - **Ordnance Hazard Evaluation Board**
 - **Weapon system Explosive Safety Review Board member**
 - **Fuze and Initiation System Technical Review Panel**
 - **Tri-Service Fuze Engineering Standardization Working Group**
- **Fuze Technology Development**
 - **Joint Ordnance Coordination Group – Fuze Subgroup**
 - **Technical Coordination Group – X Advance Firing Systems**
- **Fuze Development (DA / TDA / Monitor Roles)**
- **In-Service Engineering**

Fuze Efforts

Technology

MEMS Based S-A

Micro-Explosive Components

High Performance EFI Detonators

Mission Responsive Ordnance Fuzing System

High Shock Components

Precision Intercept Fuzing

Short Pulsed Laser TDD

Free Fall Ordnance

FMU-139 A/B & B/B Electronic Bomb Fuze

FMU-139 Re-booster Program

FMU-143 Electronic Bomb Fuze

DSU-33 B/B Proximity Sensor

FMU-140/B Dispenser Proximity Fuze

FMU-159 Hard Target Smart Fuze

FMU-152 Joint Programmable Fuze

Hydro-static Sensor

Fuze Efforts

Missile applications

JAMI ESAD Flight Termination Safe-Arm Device

FMU-155/B SLAM ER

MK-54 STANDARD MISSILE

FMU-111/B HARM

FMU-148/B Tomahawk

MK-33 Sparrow

MK-88 Sparrow ESAF

MK-13 Sidewinder

FSU-25/B AIM-9X ESAD

MK-20 Mod 2 AOTD RAM

DSU-34 TDD Sea Sparrow

DSU-15 AOTD Sidewinder

MK-45 TDD STANDARD MISSILE

Summary

- **Ordnance and Fuzing are essential to fulfilling the Warfighter's needs**
- **NAVAIR has a long history of providing a full-spectrum capability from technology to fleet support**
- **NAVAIR recognizes and supports Energetics as a Major Thrust area for the future**
- **NAVAIR committed to the future of Fuzing**

Supporting The Warfighter Then, Now and Into the 21st Century



People

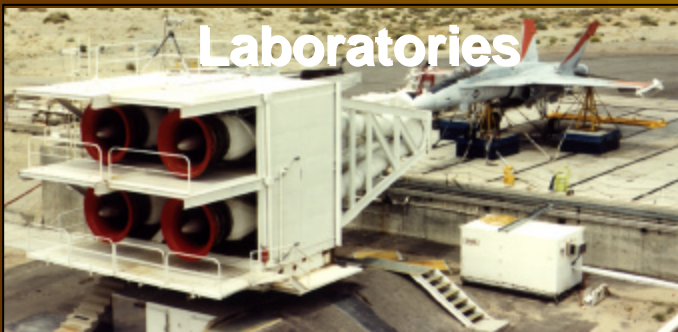
Personnel: 8,773

- **Civilians: 4,784**
- **Military: 1,104**
- **Contractors: 2,901**



Ranges

- **Land Ranges: 1.1 - million acres**
- **Sea range: 36,000 square miles**
- **Number of annual test events: 2,466**



Laboratories

- **Over 40 major laboratories**